MATH 105 Course Syllabus

Course Information

MTH 105 - College Algebra
3 Credit Hours

Preliminary Class Plan and Topics

Please see the schedule provided in the course.

Communicating with the Instructor

This course uses a "three before me" policy for student to faculty communications. When questions arise during the course of this class, please remember to check these three sources for an answer before asking me to reply to your individual questions:

1. Course syllabus
2. Announcements in Canvas
3. The Question Center discussion board

This policy will help you in potentially identifying answers before I can get back to you and it also helps your instructor avoid answering similar questions or concerns multiple times.

If you cannot find an answer to your question, please first post your question to the Question Center discussion board. Here your question can be answered for the benefit of all students by either your fellow students who know the answer to your question or the instructor. You are encouraged to answer questions from other students in the discussion forum when you know the answer to a question in order to help provide timely assistance.

If you have questions of a personal nature such as relating a personal emergency, questioning a grade on an assignment, or something else that needs to be communicated privately, you are welcome to contact me via email. I will usually respond to email quickly, but please allow 24 hours for me to respond. You will receive frequent feedback throughout the course. If you ever have any questions about your progress in the course, please don't hesitate to contact me.
If you have a question about the technology being used in the course, please contact the Doane University Help Desk for assistance (Email: helpdesk@doane.edu).

Course Description

This College Algebra course will cover fundamental concepts of algebra required to interpret a variety of functions and equations. Topics within this course include: linear, quadratic, polynomial, rational, exponential, inverse functions and their graphs, linear inequalities and linear systems of equations. Students who successfully complete this course will demonstrate increased ability in

problem solving and logical thinking.

Course Prerequisites

N/A

Course Textbook and Materials

- Textbook: Intermediate Algebra for College Students; 10th edition by Angel & Runde; published by Pearson 2019 (ISBN 10: 0-13-475899-4; ISBN 13: 978-0-13-475899-2) ● Calculator: You will need a calculator (with at least a square root key). ● Graph paper
- A scanner connected to your computer, or the ability to take pictures and upload them to your computer.
- Adobe Flash Player. Used in Week 2. If you are unable to run Adobe Flash Player for a short time, please contact your instructor.

Mathematical Practices

As a student in this course, students will:

- Investigate and apply algebraic concepts
- Use and connect mathematical representations
- Develop persistence in solving mathematical problems
- Develop reasoning and sense making
- Communicate their thinking and critique the reasoning of others

Course Content Objectives

As a student in this course, students will:

1. Compute with and categorize Real numbers
2. Solve and apply equations and inequalities
3. Analyze and use graphs and functions
4. Solve systems of equations and inequalities
5. Compute with and factor polynomials and polynomial functions
6. Compute with rational expressions and solve rational equations
7. Compute with and simplify radicals, roots and complex numbers
8. Solve and graph quadratic functions

Module Objectives

Module I: Basic Concepts (Chapter 1)
1. We will classify sets of numbers.
2. We will be able to use set builder notation.
3. We will compute using the properties of Real numbers.
4. We will evaluate expressions (including order of operations, exponents/roots, variables).

5. We will convert numbers in decimal form to scientific notation (and vice versa).

Module II: Equations & Inequalities(Chapter 2)

1. We will solve linear equations.
2. We will manipulate formulas to solve for varying unknowns.
3. We will apply algebra skills to solve real world problems.
4. We will solve and graph linear inequalities.
5. We will solve equations and inequalities containing absolute values.

Module III: Graphs & Functions (Chapter 3)

1. We will graph functions using x/y table.
2. We will interpret graphs.
3. We will identify functions.
4. We will graph linear functions using intercepts.
5. We will graph linear functions using slope-intercept form.
6. We will graph linear functions using point-slope form.
7. We will graph linear inequalities.

Module IV: Systems of Equations & Inequalities(Chapter 4)

1. We will solve systems of linear equations graphically, using substitution and using the addition method.
2. We will solve systems of linear equations in three variables.
3. We will use systems of linear equations to solve applications.
4. We will solve systems of linear inequalities.
5. We will solve systems of linear inequalities containing absolute value.

Module V: Polynomials & Polynomial Functions (Chapter 5)

1. We will add/subtract polynomials.
2. We will multiply polynomials.
3. We will divide polynomials.
4. We will use synthetic division to divide polynomials.
5. We will use the Remainder Theorem.
6. We will factor polynomials.
7. We will solve polynomial equations.

Module VI: Rational Expressions & Equations (Chapter 6)

1. We will simplify rational expressions.
2. We will multiply/divide rational expressions.
3. We will add/subtract rational expressions.
4. We will solve rational equations.
5. We will solve application problems containing rational equations.
6. We will solve variation problems (direct variation, inverse variation, and joint variation).

Module VII: Roots, Radicals & Complex Numbers (Chapter 7)

1. We will evaluate radical expressions.
2. We will convert radical expressions to exponential expressions.
3. We will simplify radical expressions.
4. We will add, subtract, and multiply radicals.
5. We will divide radicals.
6. We will solve radical equations.

       7. We will compute with complex numbers.
Module VIII: Quadratic Functions (Chapter 8)
       1. We will use Completing the Square to solve quadratic equations.
       2. We will use the Quadratic Formula to solve quadratic equations.
       3. We will solve application problems containing quadratic equations.
       4. We will graph quadratic functions.

Course Requirements

Online Course
This is an online course and there will not be any face-to-face class sessions. All assignments and course interactions will utilize internet technologies. You must have a reliable internet connection throughout the duration of the course.

This course uses Canvas for the facilitation of communication between faculty and students, submission of assignments, and posting of grades. The Canvas Course Site can be accessed at https://doane.instructure.com

Attendance in an online course means logging into the Canvas on a regular basis and participating in all of the activities that are posted in the course. In addition, check your Doane University email account regularly, as your instructor may send important information via email.

Attendance Policy

Doane University expects active participation by a student in a course, whether the course is on-ground or online. A student is expected to be prompt and regularly attend on-ground classes in their entirety. Regular engagement is expected for online courses.

You should plan to work on this course everyday. This is a condensed, fast-paced, course. Expect to spend approximately 18 hours a week preparing for and actively participating in this 8-week course. .

Course Preparation and Participation

Preparation for class means reading the assigned readings and reviewing all information required for that week. Attendance in an online course means logging into Canvas and on a regular basis and participating in all of the activities that are posted in the course.

Computer Requirements

For the successful use of Canvas please refer to Doane University's minimum computer requirements. This also includes:

- Reliable computer and internet connection
- A web browser (Chrome or Mozilla Firefox)

- Adobe Acrobat Reader (free)
- Word processing software—Microsoft Word or Google Docs
- Webcam and mic

Campus Network or Canvas Outage

When access to Canvas is not available for an extended period of time (greater than one entire evening - 6pm till 11pm) you can reasonably expect that the due date for assignments will be changed to the next day (assignment still due by midnight).

Drop and Add dates

If you feel it is necessary to withdraw from the course, please contact your advisor for full details on the types of withdrawals that are available and their procedures.

Federal requirements state that students must complete 75% of the course work to be eligible to receive an incomplete for the course. If students fall more than two weeks behind, they cannot meet this requirement.

Academic Integrity

Fundamental to our mission, our core values, and our reputation, Doane University adheres to high academic standards. Students of Doane University are expected to conduct themselves in a manner reflecting personal and professional integrity. Disciplinary actions may be taken against students whose academic behavior is not congruent with the expectations of the University. Students are responsible for adhering to the standards detailed in this policy. Not being familiar with these standards does not mean that the students will not be accountable for adherence to them. Additional details on the Academic Integrity policy for violating academic integrity are published in the undergraduate and graduate catalogs.

http://catalog.doane.edu/content.php?catoid=18&navoid=1448#Academic_Dishonesty

Course Grading

Submitting Assignments

All assignments, unless otherwise announced by the instructor, must be submitted via Canvas. Each assignment will have a designated place to submit the assignment. All material, assignments, and deadlines are subject to change with prior notice. It is your responsibility to stay in touch with your instructor and review the course site regularly to learn about changes to assignments or due dates.

Grading Scale

Assignment of letter grades is based on a percentage of points earned. The letter grade will correspond with the following percentages achieved. All course requirements must be completed before a grade is assigned.

- A+ 97-100
- A 93-96
- A- 90-92
- B+ 87-89
- B 83-86
- B- 80-82
- C+ 77-79
- C 73-76
- C- 70-72
- D+ 67-69
- D 63-66
- D- 60-62
- F <60

Late or Missed Assignments

All assignments must be completed and turned in to finish the course. Unless you discuss a late assignment with your instructor prior to the assignment due date, your assignment will lose 20% each day it is late.

Feedback

Please allow 1-3 days for feedback on assignments. Please review instructor feedback for assignments and assessments, this will help you reflect on what you have learned while receiving suggestions for improvement.

Subject to change notice

All material, assignments, and deadlines are subject to change with prior notice. It is your responsibility to stay in touch with your instructor, review the course site regularly, or communicate with other students, to adjust as needed if assignments or due dates change.

Technical Support

If you are in need of technical assistance please access the [Self Service Portal.](#) You may reach the help desk at 402-826-8411 or by email at helpdesk@doane.edu.

Accessibility Statement

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at Doane University facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. Doane University staff coordinate student transitions from high schools and community colleges, conduct in-service training for faculty and staff, enable the resolution of accessibility issues, conduct community outreach, and facilitate collaboration among Doane University staff on disability policies, procedures, and accommodations.

Disability Services

[Doane University's Disability Services Office](#) will provide guidance on accommodations and universal access. To request accommodations please complete the [Self-Identification Form](#) and visit the website for additional information.

Academic Support

Doane offers a range of academic support services for students.

For students taking courses online or for our Non-Residential students:
https://www.doane.edu/graduate-and-adult/academic-support

For students taking courses on our Crete campus:
https://www.doane.edu/students/resources/academic-support

Title IX Requirements: Mandatory Reporting

At Doane, all university employees, including faculty, are considered Mandatory Reporters. As a Mandatory Reporter, I am required to report incidents of sexual misconduct and relationship violence to the Title IX Coordinator and, thus, cannot guarantee confidentiality. This means that if you tell me about an incident of sexual harassment, sexual assault, domestic violence, dating violence, stalking and/or other forms of prohibited discrimination, I have to share the information with the University's Title IX Coordinator. My report does not mean that you are officially reporting the incident. This process is in place to ensure you have access to and are able to receive the support and resources you need. For additional information, including confidential resources, please visit the [Campus Advocacy, Prevention, and Education (CAPE) Project](#).

Instructional Technology Accessibility and Privacy Policies

If your course uses additional technology tools, information on the [technology's accessibility and privacy is available on our website](#).

Syllabus Disclaimer

The instructor and Doane University views the course syllabus as an educational contract between the instructor and students. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes via email or in the course site Announcements. Please remember to check your Doane University email and the course site Announcements often.

Doane Syllabus Addendum

Each student is responsible for being aware of the policies, resources, and expectations as specified in the Doane Syllabus Addendum located at: https://www.doane.edu/Syllabus